

1961



W

April 3
4861 - 1984
5200
5750 - August

242
672
242

7378

0859

industrially less important districts are mapped on a scale of $\frac{1}{125,000}$, or about 2 miles to an inch, and cover areas measuring 30' in latitude and longitude. Reconnaissance maps of desert or sparsely inhabited regions have been made on a scale of $\frac{1}{250,000}$, or about 4 miles to an inch, covering areas measuring 1° in latitude and longitude. Maps for special purposes are made on scales larger than $\frac{1}{62,500}$.

A topographic survey of Alaska has been in progress since 1898, and nearly 35 per cent of its area has now been mapped. About 10 per cent of the Territory has been covered by reconnaissance maps on a scale of $\frac{1}{625,000}$, or about 10 miles to an inch. Most of the remaining area surveyed in Alaska has been mapped on a scale of $\frac{1}{250,000}$, but about 3,500 square miles has been mapped on a scale of $\frac{1}{62,500}$.

A large part of the Hawaiian Islands has been surveyed, and the resulting maps are published on a scale of $\frac{1}{62,500}$.

The features shown on these maps may be arranged in three groups—(1) water, including seas, lakes, rivers, canals, swamps, and other bodies of water; (2) relief, including mountains, hills, valleys, and other features of the land surface; (3) culture (works of man), such as towns, cities, roads, railroads, and boundaries. The conventional signs used to represent these features are shown and explained below. Variations appear on some earlier maps, and additional features are represented on some special maps.

1961

10930
740
11670

①



0860

Cumulative
Canyon?

1-8919-721

2-89105



7218 at 5200'

How much

0861

(3)

them — 2,000 ft
 according to the r
 problems of ave
 of the Mississ
 detail to be use
 1 inch = nearl
 et.
 ems are of m
 mountain or de
 igh mountain
 tail to be use
 1 inch = nearl
 a contour inte
 apping. From
 planimetric m
 been made for s
 ereoscopic plo
 o in the makin
 relief as we
 in progress
 now been map
 covered by
 For most of
 ublished are
 some areas of
 4,300 square
 ch = nearly 1



King 123

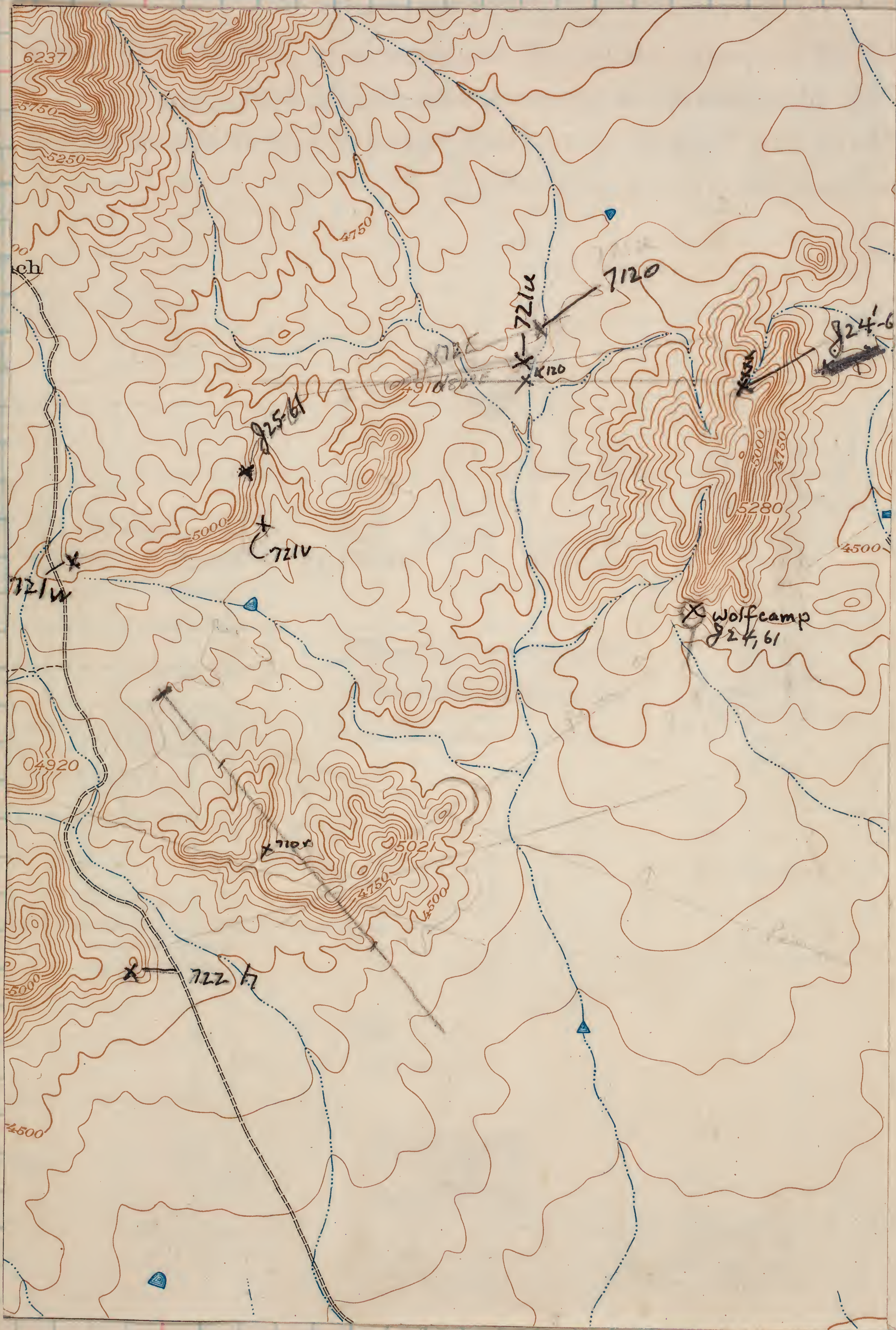
0861



King 123

0862

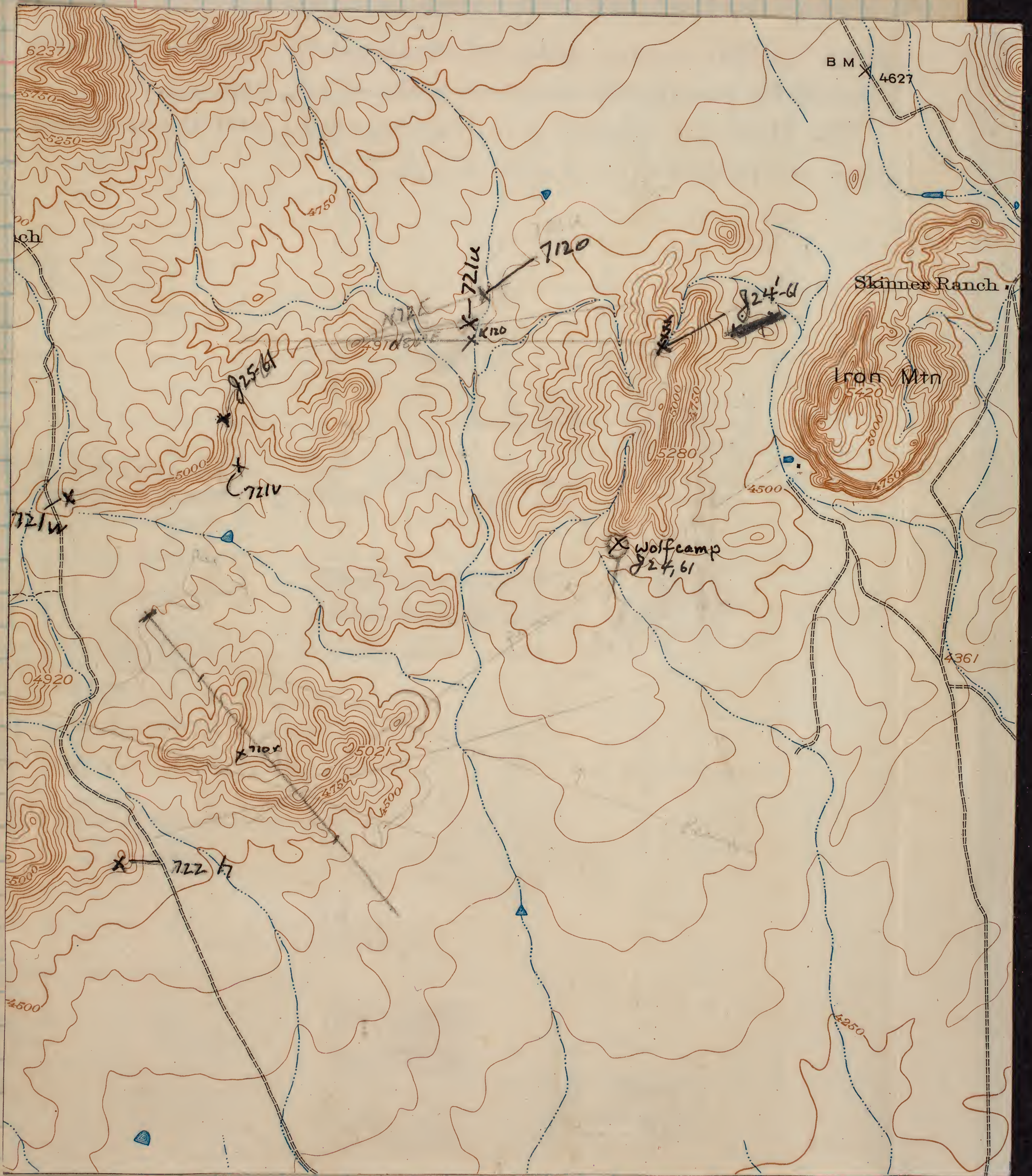
4



Go up west slope

0862

4

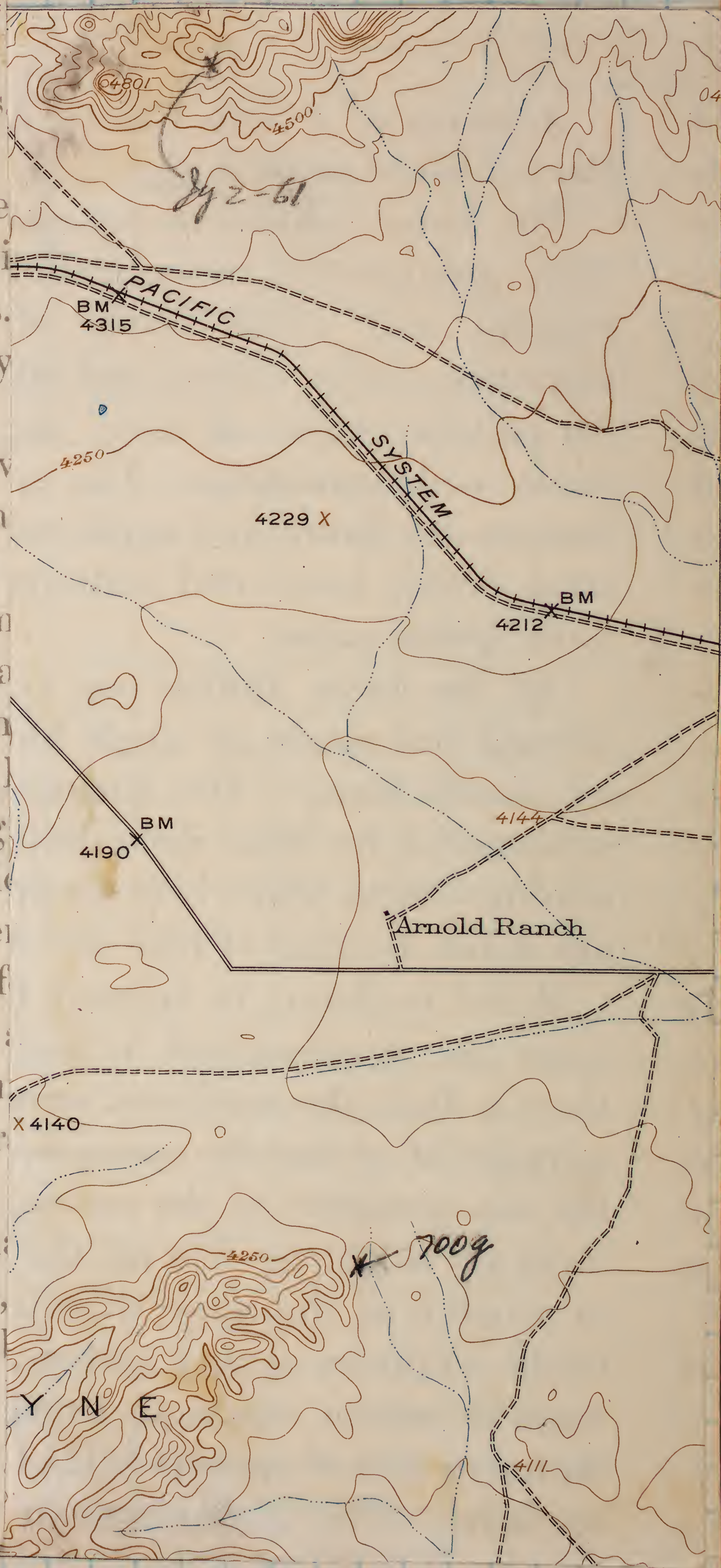


0863

ing spurs separated by ravines, their lower ends by a sea cliff. abruptly at the valley in a steeply gradually away and forms an intersected by a few shallow gullies. features is represented, directly sketch, by contour lines.

The contour interval, or the vertical distance between one contour and the next, is stated on the map. This interval differs according to the nature of the country mapped: in a flat country it may be 10 feet; in a mountainous region it may be 20, 40, or 60 feet. That the contours may be read more easily, every fourth or fifth, are made thicker and accompanied by figures showing their altitudes. Points—such as road intersections and benchmarks—are also given and show altitudes to the nearest foot. For the altitudes of benchmarks see the survey's bulletins on spirit leveling, triangulation and transit-traverse bulletins.

Lettering and the works of man, such as those of a State, city, ship, or reservation, are shown in different kinds and weights. The railroad travel the greater part of the lines; poor public roads and



0863



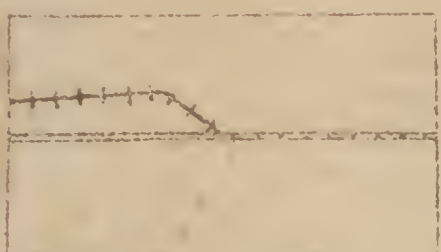
0864

⑦

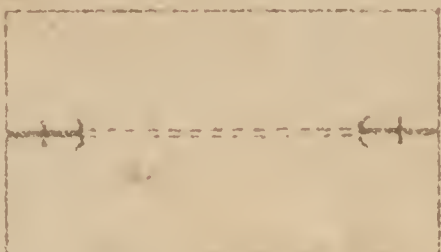
NTIONAL SIGNS

CULTURE

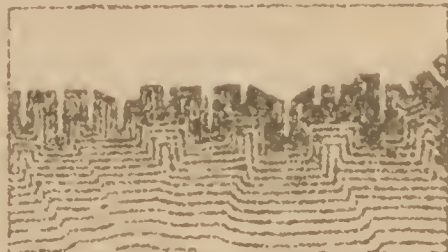
(printed in black)



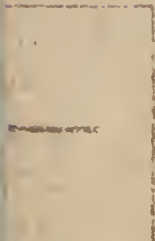
Electric railroad



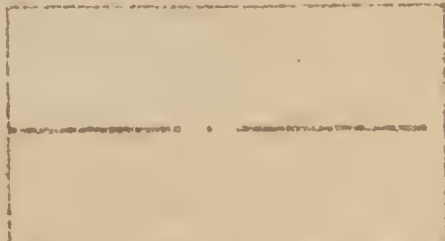
Tunnel



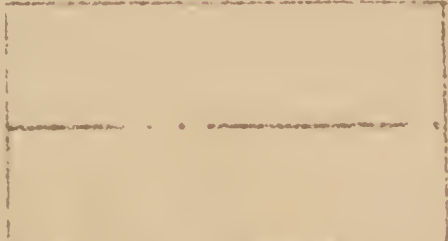
Wharves



Boundary line



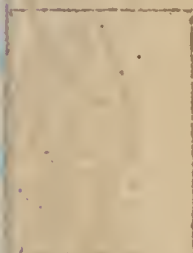
Reservation line



Land grant line



City, village, or borough



Quarry



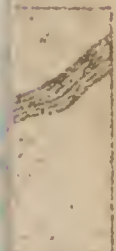
Prospect



Shaft



Mine



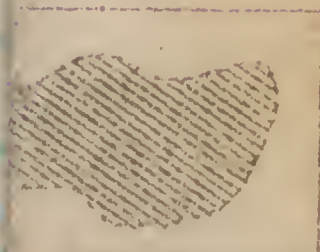
Falls and rapids



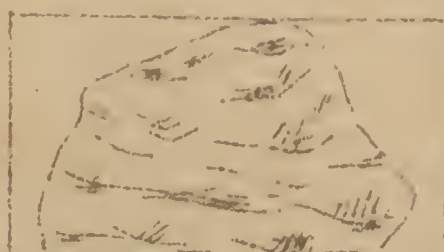
Intermittent streams and ditches



Canals and ditches

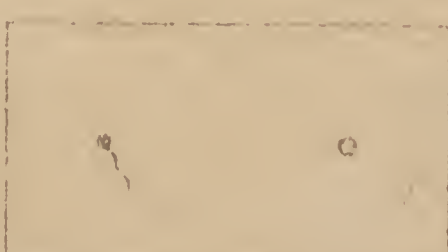


Intermittent lake



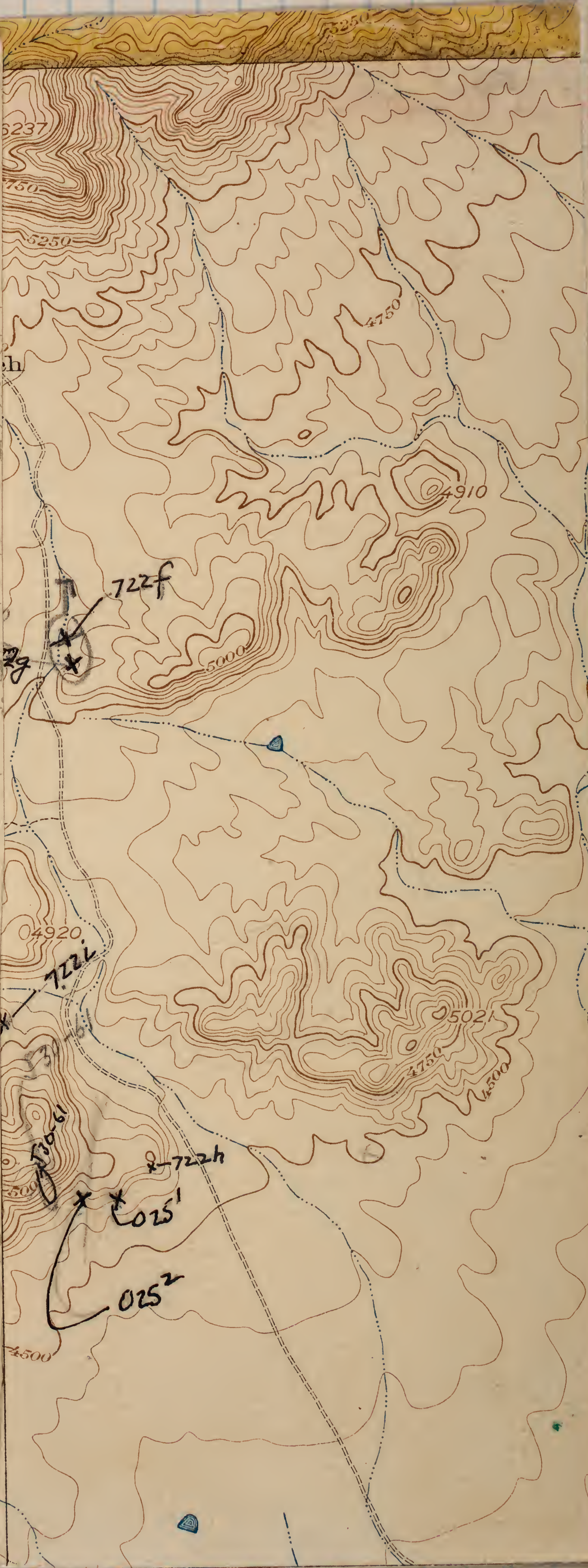
Glacier

(Or shown by contours printed in blue)



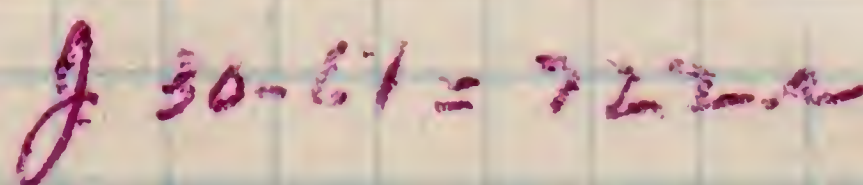
Spring Well

WOODS



J 30-61 = 722-a

7



Numbers available

722

W, X, Y, Z.

Ode 5
Parkway Hotel
C. W. Horn

June 9
⑧ Purchase of \$14.00 traveler's cheques -- 14.00
5 rolls film (36 exposures) -- 11.63

June 12
\$120 in Traveler's cheques
\$20 T 98-091-447-449 } belong to Cooper = \$110
\$50 P 77-541-880 }

Zoye, Zennis, Zeb, Zephya Decie

Zennis Decie lives at ranch

June 17th - About the fifth day of rain in
Marathon - first for us. Everything
soaked. Went to Alpine in morning to
buy supplies: sacks, pencils, tags, etc.
Met Dave Allan there and obtained
his permission to go on the ranch. On
way home called on Zennis Decie
who manages the Decie place.
Travis Roberts is man to see to get on
Arnold place.

June 18

Pictures Ekt. 6, 7 2 views of 721 j.

Spent morning working at 721 j. The small
rhynchonellids occur about 20' below the
top of the Lower Word but are rare.
Indeed all fossils are difficult to find
well concentrated. The bed with small
Leptodus appears to be in lower part
of upper tier of bioherms, roughly
20-25 feet below the top of the Lower
Word ledge.

In afternoon explored slope of hill
54.53 but found very few fossils suitable
for etching. Here, like at 721 j the lower
Word has 3 thick biohermal bands.

$$\begin{array}{r} 19 \\ 5 \\ \hline 95 \\ 8 \\ \hline 103 \end{array}$$

- 9 The lowest beds at 719 W on hill 5453 consists of 10-15' (possibly 20') of massive limestone abounding in long slender coral and *Coscinophora*, the latter of considerable size. This was followed by about 40' of bedded gray limestone (moderately thick bedded). The upper bedding surface of ten with a skin of silica. The upper part of this bed is heavier-bedded than below but not massively biohermal.

Lower Word 719 W Above this layer of 40' which is poorly exposed on the surface because the layers go to pieces come bedded limestone moderately thick beds becoming biohermal at the top and in places forming a prominent ledge. The whole is 30' thick. The upper part 10-15'.

The final layer is massively biohermal at top, in places 15-20" but the lower ten feet or more are light weathering blocky limestone, often containing a small rhynchonellid and in places lenses of fusulines.

Scattered fossils appear in the two upper bioherms together with considerable detrital material. Also corals are present. *Orthotrichia* is common and small rounded silicious masses are common. *Coscinophora* was seen in all parts of the lower Word limestone and this is a good index to this level.

721j locality: - In 1959 one piece from this locality contained a fauna similar to that of 702c and it was thought that Upper Leonard was present. Restudy of the section leads me to believe that it is all lower Word and no Leonard is present. I saw

(10)

large Penninularia well up in the lower Biohermal part of the Lower Word. The Fort Stockton road has been remembered: US 385.

June 19.

Ekt 8 - Hess Ranch and hill to north

8-16 - Sponge bed

17, 18 = 702c from west

19, 20 = View up Hess Canyon showing bedded Hess opposite The Horst

21 - View looking east from near Hess Ranch to show thin bedded Hess limestone

719X - just south of 721j. 4 blocks

On spur between two arroyos under knob at 5250 at base of sequence are some 25-30' of massive biohermal limestone containing Coscinophora and other fossils. We took four blocks which contain large productids from about 10' above the lowest exposed rock. This appears to contain a fauna like 702c but as nearly as I can tell it is definitely part of the lower Word limestone. This is the same material as we etched from 721j. or j. 19, 59 but designated by a separate number.

In morning visited Word 1 near the divide near 702c. This is all dolomitized. Went to sponge beds for photographs.

0868

(11) June 20-

1K1 - Scacchiella at base of big bioherm

1K2 - Bioherms on hill

1K3 - Lime sand ledge at base of bioherm on slope = 719y. Cobbly beds for 1 or 2 feet below heavier ledge which contains many small detrital fossils. Main mass of bioherm lies over this layer which dips toward the bioherm center. Bioherm center has few fossils at least not on the surface. Heliospongia abundant.

On SE slope the basal calcarenite is 3-4 feet thick, followed by soft cobbly beds, then irregularly bedded calcarenite capped by a flat calcarenite to the main biohermal mass which is a calcarenite. All these beds dip steeply toward the bioherm. The calcarenite beds have numerous Heliospongia.

1K4,5 - view of NE side hill showing thick flat calcarenite + knob above it

720Z-1K6 - Close-up of knob at King 105
= 722u

1K7,8 view from 720C showing K105 and 719y. 7 taken with 75mm

719Z about 50 above valley floor lens in the lower wall 4

1K9 - blue flowers

No collecting possible at 720Z so went over to the word 4 opposite the divide in Neas Canyon. The lowest beds with fossils were about 50 feet above the level of the divide.

(12)

This is locality 7192. Another locality about 100 yards west is called 7204 and is about 50' higher. In both places the fossil beds form lenses and are near the base of Word 4, probably below the base

7202 is used to denote a large isolated bioherm of *Saccinella* beds just west of 720C.

7194 is a series of bioherms on the slope just west of 7202. They contain abundant *Saccinella* and the calcarenite beds under and dipping toward the bioherms are well displayed along the slope into the ravine.

721Q-Q June 21 - just under 5674

10'-15'	F	Basal beds very massive limestone
38'	E	with long slender corals and masses of <i>Coscinophora</i> . The <i>Coscinophora</i> and corals occupy the lower 10', the middle 15' are mostly coarse calcarenite with few fossils. The upper 7'-10' contain <i>Coscinophora</i> and this forms the top of the biohermal basal bed. This is similar to the section at 7194 where <i>Coscinophora</i> is in the lower biohermal but the beds with varied fauna are below <i>Coscinophora</i> and are apparently not exposed here.
15'	D	
16'	C	
1'		
65'	B	
32' vertical	A	B = 65' vertical of blocky, light gray weathering fine grained calcarenite with abundance of <i>Parafusulina</i> terminating in a massive of

(13)

ledge of fine grained calcarenite with thick (12-16") of chert on top.

721gc

C - 16' vertical of thin bedded platy calcarenite and plates of yellow shale interbedded with the darker limestone which is thicker, blocky, frequently with numerous furrows.

D - E massive bluish calcarenite at base becoming dolomitic toward the middle ^{15-20'} to form a tan-colored rock with many pits and remnants of fossils. A break of 5' mostly covered but with thinner-bedded material follows and this by 10-15' of massive biohermal calcarenite. Bed E forms the top of limestone of basal word. It is followed by orange-yellow platy shale. D is the lower part of the upper bioherm. The top of E is about level with a point halfway between the two ^{north} easternmost knobs on Leonard Mtn.

F is 10-15' of yellow shaly rock but with bluish lenses of rock like D. The lenses are fossiliferous and suggest those of bed E.

1K10-14

1K10-14 - 10, 11, 12 Corcinophora at 721g. 13 is back slope Leonard Mtn showing the Bunt house ls. 14 is looking east from 721g and showing massive upper ledge of the Lower Word.

1K15 - looking up lower Hess Canyon. Top of E is estimated to be at 5200' on the slope.

(14)

721r -

3'	E
shale 10-15'	D
5'	C
3-5'	B
shale ?	A

A - shale covered
 B - mealy bed with *Anidantulus*
 C - Sandstone + calcarenite, sandy & orange yellow on top.
 D - shale covered
 E - Orange sandy beds

Collections made from B - 2 blocks taken. 721r is estimated to be at 5050'.

7215 - *Coscinophora bioherm* about 1/3 way up in lower Word. Trilobite base

721t Lower *Coscinophora* near base of lower Word.

709 - Knob at N end of west side Leonard Mtn. Mostly massive calcarenite but much conglomerate in the limestone on west side. Saw *Uncinuloides* and *Orustitella*. On north side Knob limestone continues but beds dip toward Leonard Mt and consist of blocky dark limestone and dolomite with numerous ammonites. I suspect that the ls of the knob lie way above the top of the Burnt House fm.

Am going from the knob (709) to King's lot. 123. We went through yellow shale, hard and

(15)

brittle and some blue shale but saw isolated bioherms scattered about. The locality of King (123) suggests a bryozoan bioherm that had gone to pieces and spread out on a slope.

7215 - This comes from about top of *Coscinophora* zone of Lower W. det.

1K16 - Cactus

1K17 -

1K18 - View of 7119 and LW above it.

1K19 - Cherty bed at top of King's fossil bed.

1K20 - 702C knob, close up from west

1K21 - small bioherm just east of 702C

J22 - King's fossil bed at about 5450' Here it is quite thick and occupies about 30' vertical from bottom to top. Bottom is limestone conglomerate and top is a cherty limestone 4-5' thick. The chert being yellow to orange in color. *Peritularia* is common about 1-2' below the top of the cherty beds. The beds between the lower cgl. and the upper chert are mostly cobbly limestone which goes to pieces and is strewn over the surface. Some big productids also about halfway up.

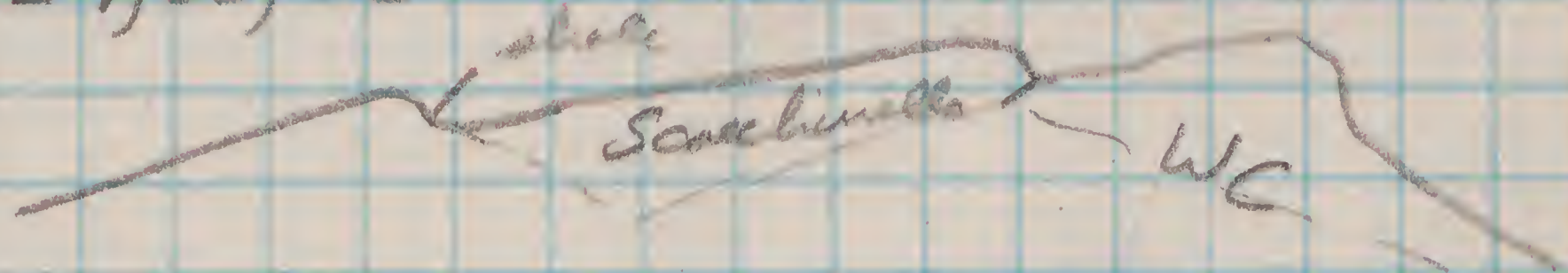
J22' - Occurs near pass at headwater of Hess Canyon. The fossil bed is thinner than at J22 but occurs at about 5400' Found *Ischernyschenia* but it is very rare.

(16)

1K 22, 23 - View of 706d and closeups of chert

706d - is about opposite

1K 24, 25, 26 - West end horst showing profile



1K 27 - Looking west at end of hill with Lower Word & showing Capitan in Distance.

1K 28 - *Aulosteges biherm* 703a1K 29-31 *biherms* at 703a.1K 32 - *Leptodus* ledges 703a'

June 23 - Spent morning looking at Word 4 with little success. Took 2 blocks from locality 706d. In afternoon went up to Hall Ranch for pictures of *biherms* and possible Word #1 blocks. Took 2 blocks.

Road changed to run nearly parallel to *Aulosteges* ledges. Much erosion in old road showing up *biherms* in relief and the surrounding yellow shale.

722t - blocks originally labelled 720y but changed to 722t.

(17) 1K33 - Mtn W of Lion Mtn from south

1K34, 35 Wolfcamp nose of hill west of Lion Mtn. 34 to NE & 35 to NW

1K36, 37 Southeast nose of Mtn W of Lion Mtn.

2K1 - Hill west of Lion Mtn from N

2K2 - near King 120.

2K34 - West face Leonard Mtn

June 24

Went to Lion Mtn Ranch to south end of Mtn west of Lion Mtn. Here saw about 50 feet of shale overlying orange yellow conglomerate and sandstone. Saw Wolfcamp fossils in float pieces. Saw no fossils in the shale. The Wolfcamp section appeared to me to be at base of a large block detached from the main part of the Mountain. The cgl. overlying the shale dipped steeply into the mountain and a big gap appeared between it and the main mass of the mountain.

Went up northeast spur of this Mtn to King's localit 3 to see *Uncinuloides* and look for peculiar wrinkled productid. The latter occurs in the very top bed of the "Hess" and the *Uncinuloides* in the top 10 or 15'. The top of the Hess is very conglomeratic but the pebbles are small. The productids occur mostly in the siliceous skin on the very upper surface of the

(18)

Hess Limestone

Above the Hess is yellow siliceous shaly rock, the typical Leonard, but it contains thin (6" to 1") beds of dark granular limestone with many fossils.

In the uppermost beds (top 5') of the Hess I saw *Rhipidomella* (large *hessensis*?), *Anidantius*, *Chondosteges*, *Uncinuloides*, large *Stenocrinus*, *Murchella*, *Derbyia* and occasional large productids and a fine ribbed *Neospirifer*. The *Uncinuloides* suggests those of 710 r. The north spur of this hill nearly to the crest is all dolomite.

721 u - In bank of stream along road to Clay slide a 1 1/2' layer of calcarenite with many fossils, especially *Institella*. Under the upper blocky layer the rock is irregularly bedded with many large productids and large *Leptodus*. These lower layers suggest biohermal material. This bed is about 1/2 mile N 80° E of hill 4910 and approximately in King's locality 120. King gives the level as lower Permian horizon. Took 6 blocks on June 24.

(19)

J 25-

2K4 — Clay Slide

2K5 — Sullivan Peak from saddle w
of Clay Slide

2K-7, 8 Cap ledge at 710 u

7120 is $N72^{\circ}E$ of hill 4910 on the stream

In morning went to hill west of
Clay slide hill for lower Word.
Impossible to get jeep in valley
between hills and found very little
there.

Went to 710 u but found no good
blocks.

Took a good block from 721 u
Here we were near the base of the
lower Word. Below the massive
ledges come thin-bedded Word with
Megascia and other species but
specimens are so scattered
that no good pieces could be
found.

On way home took 3 more
pieces at 721 u.

0877

(20)

2K 9 - View west from 720d.

720d - Leonard's Word contact I guess at about 4900 near mouth of ravine. Lower beds are massive with *Coscinophora* but also many other fossils. Perhaps 30' of these beds followed by thin-bedded limestone with yellowish silicious rock up to about 5030' where a biohermal bed with corals but very scattered fossils forms a bench.

46 higher up to about 5076' is another bench capped by blocky calcarenite, dark gray fossiliferous.

This ledge is followed by 15' of yellowish shale containing scattered calcarenite layers and small bioherms. This is about the level of 720d, which is 5100'. Took 3 blocks from 720d.

2K 10 - *Coscinophora* at base of 721g

721x - Blocks from this come from the lower 30' of the Lower Word in the beds with *Coscinophora*. This is not common but was seen at the base. Took 4 blocks.

721g - On the hillside opposite 721x and in the same beds. Mostly biohermal limestone but fossils not well concentrated. One large patch of *Coscinophora* was photographed.

(21)

- 2K11 — Buzzards
 2K12 — Iron Mtn Ranch House
 2K13 — blocks in yard.
 2K14 — Cathedral Mtn from US90
 2K15 — view on Iron Mtn Ranch next
 gully east of 7214. showing word 1 &
 word 3 capping hill
 2K16 — Loc 720d, 721x, 721y
 2K17, 18 — Cacti at 7212

722c is in the upper ledge (thick bioherm) of the lower word. It is the one forming the thick layer at 720d. It is characterized as a light buff calcarenite with numerous siliceous blebs.

7212 is 45 higher than the thick ledge and corresponds to 720d. At 7212 however the lenses in the yellow word are few, small and scattered.

2K19, 20 West side Leonard Mtn

The 722c represents the middle biohermal ledge on this side of the valley. In most places fossils other than corals are rare in this ledge.

(22)

June 28 -

Peak

2K 21 - Sullivan from pass on
Deane Ranch.

710h - Small chonetid bed forms a band about 4' thick around the knob at 5250' and about 30' below the crest of the knob. The chonetids are distinctive but very scattered and had to be collected in individual small pieces with one or two specimens to the piece. The bed is at about 5220'.

2K 22 - yellow daisies (small, size of quail)

Afternoon interrupted by rain but three hours were spent in prospecting the west side of the back slope of the hill just east of Sullivan Peak. The rock is massive mostly calcarenite with long slender cup corals and silica blebs. Coscinophora occurs at top. Other fossils are concentrated in patches and are usually not obtainable because of the massive nature of the rock. Some limestone egl. appears at the top.

2K 23 - 707E with 75mm lens from base of Mtn.

0880

(23)

June 29.

Went to spur of Sullivan's Peak for blocks.

The zone with Chonetina is the lowest zone of brachiopods and occurs 185 feet below the top of the nose or at 5165 feet. This zone appears to be about four feet thick. Below it the rock is very thin-bedded.

The next 76 feet above the Chonetina zone has few fossils. Saw a few high-spired snails. Chert abundant.

From about 5241 feet to 5257 feet the rock is highly fossiliferous and this is the abundant concentration of brachiopods and the part from which our blocks come. From 5157 feet to 5285 the rock is crowded with bryozoans and is cherty.

Above 5285' to top of knob at 5350' the rock is less platy, contains many fusulines in places. At top of knob and along narrow ridge of hill Coscinophora was seen and the rock is full of long thin corals and blebs of silica. The top is like that of the hill immediately to the east.

In late afternoon visited 7102 which is the top of the Bunt House. Here it is very conglomeratic with small pebbles and what appear to be boulders of limestone, well rounded. Sponges and fragments of sponges are abundant. Unable to rediscover the collecting spot of 7102.

(24)

J. 30-61 - Went up first gully from fault to check beds between Hess Ledge and Leonard ls. # 1. The rock is mostly shale, actually clay shale in places but has lenticular limestone of greater or lesser length. ~~length~~. These are detrital and have much broken material in them. Along the lower 50' some of these lenses and plates have the small Elliottella-like productid. I think this is its proper horizon. The shales generally weather yellow and the sands and sandy cgl ls are also yellow.

722 K - This is on the side of the spur toward the Sullivan Ranch road about 55' below the top. The beds are on the south facing slope. Mostly detrital limestone with iron-siliceous brown chert containing Spiridiophora. The zone is about 10 feet thick and occurs at about 4695' to 4685'. This corresponds to one of my 707 numbers.

2K24 - Windmill Hill from west side and taken from Sullivan Ranch road showing 2 ledges with shale between.

2K25 - Corcoran Hill from SW

2K26-30 - Windmill Hill

2K31 - Storm approaching Iron Mtn.

2K32 - Lewis Hills from Windmill Hill

2K33 - J 30-61

2K34 - Spur.

(25)

2K 35 - Thick cgl. south middle
Lenox Hills

2K 36 - Contact Dev. & Wolfcamp

2K 37 - High hill just east of
windmill and 2K 36.

3K 1-9 lost - film wrinkled

3K 10-12 - Coscinophora bed on Decie's

3K 13, 14 - Middle Decie with Lenox
Hills cgl in foreground, one to N (13), one
to west (14)

3K 15 - Lenox Hills cgl.

3K 16-36 - Spool came out of racket
Rewound.

Jy 1-61 Went up gully just W. of 708c.

First 30' above Hess ledge consists
of thin bedded yellow shale becoming
mealy limestone for 1 or 2 feet. Then
hard detrital ls for one foot. Then
mealy limestone. *Scaphinella* was
found. This interval is stratigraphic.

0-16 steps vertical above Hess (including
30' described above. The ravine is covered
except for the lower 10' vertical.

16-27 - Mostly dark shale with thin
layers of ls subordinate. Here I saw
a block with many small prods. like 707 ha.
At top of 26 comes a mealy band of 1'
with fossils (n. gen. prod. like *Spirifer*).
Then 2' hard silicious shale followed
by a 3' limestone cgl. with *Strophomena*.
This forms top of 27'. Boulders in
cgl. up to 3'.

27-28 - About 5 1/2' of hard bedded chert
dark gray but weathering yellow.

Top of Ls #1 at

(26)

28-29 - Mostly shale

29³⁰ - Thick beds of detrital limestone with brown siliceous skins containing *Spyridiophora*, n. gen., *Poikilocrinus*-like *Aptodid*, *Meekella*, *Spiriferinids*. The top of this 11' interval has another 2' of chert. *Limella*.

31-32 - Thick bed of ls congl. with boulders up to 4' in one direction

33-36 - About 22' mostly of chert & thin bedded ls.

37 through 40 - Mostly thick bedded ls one to 3' thick with siliceous skins & some interbedded chert.

41 thru 45 - 27' of massive cgl. having limestone and quartz pebbles. Capping ledge is 2' of sandstone making total of 29'.

46, 47, 48⁴⁹ - all in thin bedded 2" to one foot of sandstone and sandy limestone which terminate the Leonard #1. Above it is the yellowish to orange siliceous shale of the Leonard.

The Leonard #1, I should say extends from 29-49 = 113' and the *Spyridiophora* are in the lower part.

In the next ravine east the 22' (1/2 mile) of sandstone & sandy limestone are not present and the Leonard sits on cgl. with boulders but also some sand in the cgl.

The Leonard is more siliceous & more blocky than the interval between Hard Ledge & Leonard #1.

0884

(26)

At Jy 1-61 I estimate Hess Ledge at about 4650'

4K 1-13 - Hill 5300 on Decies
8 & 11 are at 7020

4K 14 - Dugout 17 ft from N side

4K 15, 16 - *Scacchinella bioherm* Sof
Arnold Ranch.

4K 17 - flowers.

4K 18-23 - Bioherms & cgl. at Jy 2-61
(rare flowers)

Jy 2-61 - 2 large bioherms flanked
on each side and in between
by conglomerate. The bioherm has cgl.
at the base (ls, cgl) is of light gray
limestone with much scattered
siliceous material. Small corals
Spiral corals and scattered tracks. Silicon
material might be algal. About 30' high &
about 100' wide. Some of the silicon
material is byzovog. In places a cgl
of huge crinoid stems at base.

The western bioherm is about 25' high
and 75' long and sandwiched between
cgl with huge boulders. The upper part
of the bioherm overlies the lower part
of the cgl. It apparently overlies cgl
which can be seen at the base of the
bioherm. Some cgl & pebbles in bioherm.
The biohermal rock is lime sand.

- 4K24 - Richmans Sand Decie
 4K25, 26 - Yellow flowered Dugout.
 722j - limestone bed between Hess
 Ledge + Leonard #1. Contains small
 productid suggestive of one from
 708c. This should be compared
 closely with the small productid
 from 707ha. The two may be the
 same. This would also account for
 the Striatifera which may be the
 same. This location is about 75 feet
 above the Hess Ledge (guess). Saw
 Spiridiophora here.
 4K27 - Hess ledge all cgl. about
 75-100' thick.
 4K28 - Some kind of sage.

✓
 July 3-61 - Low hill of Leonard ls #1, mostly
 calcarenite, conglomeratic, coarse
 grained in thick layers. Fossils few
 scattered and badly broken. Not
 coarsely conglomeratic as on Decie's place.
 722K - a cut bank in the yellow shale
 between Hess Ledge and top of Leonard
 #1, at a guess 75' below top of Leonard
 #1. Saw small productid, like those
 from 722j and Limbella & Spiridiophora
 Chongstages. The thick pinkish gray chert is present
 in Leonard #1.

Between #1 & #2 is much sand & chert
 in the form of lumps, pinkish & yellow.
 We saw few fossils in the limestone,
 mostly small productids.

4K29 - flowers (red).

4K30, 31 Dugout mtn showing Wolfcamp
 shale lens

4K32 - 707a

$$\begin{array}{r}
 50 \\
 259 \\
 114 \\
 \hline
 303 \\
 \hline
 726
 \end{array}$$

$$\begin{array}{r}
 55 \\
 15 \\
 \hline
 275 \\
 55 \\
 \hline
 825
 \end{array}$$

0886

4K 33, 34 - WC Hills
4K 35 - Neal Ranch
4K 36 - 701d from east side

5K 1 - 701d close on east side

5K 2 - *Striatifera bioherm*

3 - side view up Geologist Canyon

4 - Easternmost bioherm 701c. or

Leptodid bioherm.

5 - View up geologists canyon showing
701a, bed 4 & 9 - Failed to step down

6 - same as 5

7, 8 - West end of 701h showing
mosaic under it

9, 10, 11 - 701K bioherm + mosaic

12 - up Geologists Canyon.

13, 14 - 706e.

Locality 5+. July 4

West base of hill west of Wolf
Camp Hill. *Striatifera* beds of
upper WC.

0887

July 4 - Went to Wolfcamp Hills where we collected 3 blocks from the *Stratificera* beds.

In afternoon went to Hess Ranch for 706e blocks for Stehli and Winston. Called on Hess family at the Ranch house.

July 5 - packed all day. Wrapped 42 ~~42~~ blocks for shipment and have 40 to go

July 6 - Finished packing - 81 bundles and 4 boxes.

July 7 Shipped boxes

July 8 - Travelled from Marathon to Van Horn. Arrived late morning. Had car looked at. Afternoon called on Mr. Nutt for permission to go to Red Tank Canyon. Reserved rooms at Michel Creek Camp.

725a = July 9 - Layer of fossiliferous Keeco. about 30' below top of hill facing last west flowing ravine on west side of Divide in Red Tank Canyon. Contains *Leacchinella*. Occurs at about 4920'. Took 2 small pieces

725b = This is a MNH # 700 it is on the east side of the last ravine flowing west on the west side of the ravine. The bed is about half way up the hill between the top of the hill and the surface of the Divide. The bed contains large *productids*, *Leptelasma* and some others. We took 5 small pieces. The elevation is at about 4750'.

July 4.

0889

July 19 - Worked on NE side
last hill of Baylor Mtns on
the north side of the Mtns.
hill 4422 (4410) on west side
US 54. Took 5 blocks and
some small pieces

725c - Thin seam of fossils about
130 feet above the Hueco limestone

725d - Mollusc bed about 108'
above Hueco limestone

Refused entrance to Victoria
Canyon, came back to Van Horn
and prepared 11 blocks + one
bundle for shipment.

0890

July 11 - Sent 12 bundles totaling
740 pounds from Van Horn. Left
town about 9:30 aimed Nickel

Camp 11:00 AM. Went east of the
Nickel Creek place to a hill N of
the highway and about opposite
the entrance to the D Ranch
on the N side of the road. Here
found extensive exposures of

725c

Lamar and took 4 blocks and
2 small pieces numbered 725c.

725c - About $\frac{1}{4}$ mi N of U862-180,
 $3\frac{1}{4}$ miles NE of Hegler Ranch, and
 $\frac{1}{2}$ mile NE of junction of Pratt
Place road with main highway
and opposite present junction of
D Ranch road with main highway

- 725i — Lowest Capitan or uppermost
Pinery Smith Canyon, north of
Frigate, Texas
- 725j — Capitan — Smith Canyon

July 14 — Went up Smith Canyon to see
Capitan. Mostly massive detrital
and with few fossils. Collecting very
poor.

- 725k — One block about 500' below top in
canyon N of Pine Spring

- 725-l — Mostly from about 500' below
top of Canyon N of Pine Spring.
Some several hundred feet
lower.

- 725m — Very top of canyon N of ^{Upper} Pine
Spring.

July 15 — Went up Canyon N of Upper Pine
Spring on a fine trail. Climb took
3 hours. At very top or edge of plateau
The Capitan contains a great mass
of fusulines. The limestone for the
upper 750 feet is mostly light
colored, rather smooth and
with scattered brachiopods. Collecting
was disappointing.

0892

SK-23 - Radar ridge from
Nickel Creek Camp

Mr. R. A. Tizon, Pine Spring Route, via Culbuck
Nickel not Nibbles

SK 24, 25 - Nipple Hill from Hagler place
SK 26, 27 - Up Pine Spring & Canyon to N

0893

Blocks from Guadalupe

Lamar	725e	—	—	—	—	—	—	—	—	4
Hegler	731	—	—	—	—	—	—	—	—	6
Getaway	Newell 600	—	—	—	—	—	—	—	—	1
Rader	725f	—	—	—	—	—	—	—	—	6
Rader	725g	—	—	—	—	—	—	—	—	1
Piney	725h	—	—	—	—	—	—	—	—	2
Piney	725m	—	—	—	—	—	—	—	—	1
Rader	725o	—	—	—	—	—	—	—	—	1
										<hr/>
										22

about 2700 lbs.

0894

Numbers Available

~~719 x, y, z~~

~~720 y, z~~

~~721 y, z, t, u, v, w, x, y, z~~

~~722 e-z~~

~~723 a-z~~

~~724 a-z~~

~~725 ^c a-z~~

List of blocks

	721 i	—	—	—	—	—	—	—	7
x	719 x	—	—	—	—	—	—	—	11
x	719 z	—	—	—	—	—	—	—	4
x	720 y	—	—	—	—	—	—	—	2
x	721 a	—	—	—	—	—	—	—	2
x	721 s	—	—	—	—	—	—	—	2
x	721 t	—	—	—	—	—	—	—	1
	706 d	—	—	—	—	—	—	—	2
	703 c	—	—	—	—	—	—	—	2
x	721 u	—	—	—	—	—	—	—	9
x	721 w	—	—	—	—	—	—	—	1
	720 d	—	—	—	—	—	—	—	3
x	721 x	—	—	—	—	—	—	—	4
x	721 y	—	—	—	—	—	—	—	6
	721 z	—	—	—	—	—	—	—	1
x	722 e	—	—	—	—	—	—	—	4
x	722 f	—	—	—	—	—	—	—	1
	707 e	—	—	—	—	—	—	—	8
x	722 g	—	—	—	—	—	—	—	2
x	722 h	—	—	—	—	—	—	—	1
x	722 i	—	—	—	—	—	—	—	3
	5+	—	—	—	—	—	—	—	4

10930 pounds

50

80

721